



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DISTRICT OIL AND GAS OPERATIONS

March 18, 2013

Certified Mail # 7011 2970 0004 1348 4656

Carrizo (Marcellus) LLC,
Attention: Gary J. Byron, POA
P.O. Box 231
Drifting, PA 16834

Re: Yarasavage 1H
Permit No. 131-20191
Washington Township, Wyoming County

Dear Mr. Byron:

On March 13, 2013, the Department inspected your company's Yarasavage 1H gas well site located in Washington Township, Wyoming County, following a call reporting a well control incident on that date. According to Carrizo, the flange between the frac head and wellhead started washing out and ultimately failed. The Department was first notified of the incident at approximately 6 PM. It was later reported that Boots & Coots ultimately arrived on site and, with Carrizo personnel, successfully shut the well in at approximately 1 PM on March 14, 2013. The Department conducted a follow-up inspection at approximately 10 AM on March 15, 2013, and learned that two bridge plugs set in place the previous day were holding and the new gate valve was holding. The Department's initial investigation revealed the following violations of the Oil and Gas Act, 58 Pa.C.S. §§ 3201-3274 (2012 Oil and Gas Act); the Solid Waste Management Act, 35 P.S. § 6018.101 et seq.; and the Clean Streams Law, 35 P.S. § 691.1 et seq.; and the rules and regulations promulgated under these statutes:

1. Pits and tanks for temporary containment.

The Department's investigation revealed that pollutional substances generated from activities associated with hydraulic fracturing were not contained. Specifically, an unknown quantity of frac fluid was released from the gas well on site. This is a violation of the Department's regulations, 25 PA Code § 78.56(a), which provides:

Except as provided in § 78.60(b) and § 78.61(b) (relating to discharge requirements; and disposal of drill cuttings), the operator shall contain pollutional substances and wastes from the drilling, altering, completing, recompleting, servicing and plugging the well, including brines, drill cuttings, drilling muds, oils, stimulation fluids, well treatment and servicing fluids, plugging and drilling fluids other than gases in a pit, tank or series of pits and tanks.

2. Management of residual waste.

The Department's investigation revealed an unpermitted discharge of residual waste onto the ground at the site. Specifically, the frac fluid was released onto the well pad and into an adjacent field. This is a violation of the Solid Waste Management Act, 35 P.S. § 6018.301, which provides:

No person or municipality shall store, transport, process, or dispose of residual waste within this Commonwealth unless such storage, or transportation, is consistent with or such processing or disposal is authorized by the rules and regulations of the department and no person or municipality shall own or operate a residual waste processing or disposal facility unless such person or municipality has first obtained a permit for such facility from the department.

3. Unpermitted discharge to Waters of the Commonwealth.

The Department's investigation of this event revealed an unpermitted discharge of frac fluids to Waters of the Commonwealth. Specifically, an unknown quantity of frac fluid was released from the gas well, flowed off of the well site and discharged into a field where it was being collected by Carrizo. Additionally, laboratory analytical results indicate that frac fluid was discharged into a roadside ditch that was receiving shallow groundwater from a field drain tile. The drain tile is located in an area of a wetland. The roadside ditch and the wetland are Waters of the Commonwealth and are located within the Taques Creek watershed. This is a violation of the Clean Streams Law, 35 P.S. § 691.401, which provides:

It shall be unlawful for any person or municipality to put or place into any of the waters of the Commonwealth, or allow or permit to be discharged from property owned or occupied by such person into any waters of the Commonwealth, any substance of any kind or character resulting in pollution as herein defined.

4. Failure to operate and construct the well to ensure the integrity of the well is maintained and health, safety, environment, and property are protected.

The Department's investigation revealed that Carrizo failed to maintain control of the well during hydraulic fracturing operations on the Yarasavage 1H well. This is a violation of the Department's regulations, 25 PA Code § 78.73(a), which provides:

The operator shall construct and operate the well in accordance with this chapter and ensure that the integrity of the well is maintained and health, safety, environment, and property are protected.

A violation of the 2012 Oil and Gas Act or the rules or regulations promulgated thereunder is contrary to Sections 3255 and 3256 of the 2012 Oil and Gas Act, 58 Pa.C.S. §§ 3255 and 3256, for which the Department could institute administrative, civil, and/or criminal proceedings. For violations arising from the construction, alteration, or operation of an unconventional well, the 2012 Oil and Gas Act provides for up to \$75,000 in civil penalties plus \$5,000 for each day of continued violations, 58 Pa.C.S. § 3256. The 2012 Oil and Gas Act also provides up to \$1,000 in summary criminal penalties, and up to \$5,000 in misdemeanor criminal penalties for each violation. Each day of continued violations constitutes a separate offense, 58 Pa.C.S. §3255(a)-(b).

A violation of the Solid Waste Management Act or the rules and regulations promulgated thereunder is contrary to Sections 601 and 610 of the Act, for which the Department could institute administrative, civil, and/or criminal proceedings. The Act provides for up to \$25,000 per day in civil penalties, up to \$1,000 in summary criminal penalties, and up to \$25,000 in misdemeanor criminal penalties for each violation. Each day of continued violation constitutes a separate offense.

A violation of the Clean Streams Law or the rules and regulations promulgated thereunder is contrary to Section 602 and 611 of the Act, for which the Department could institute administrative, civil, and/or criminal proceedings. The Act provides for up to \$10,000 per day in civil penalties, up to \$10,000 per day in summary criminal penalties, and up to \$25,000 in misdemeanor criminal penalties for each violation. Each day of continued violation constitutes a separate offense.

Please submit a written response to this Notice of Violation within 5 business days. Your response should include the following:

1. A complete list of materials used in the fracturing fluids utilized at this site.
2. An evaluation of the materials released to the environment as part of the hydraulic fracturing operations.
3. A description of immediate actions taken by Carrizo to prevent this discharge from reaching Waters of the Commonwealth.
4. A description of immediate actions taken by Carrizo to regain control of the well and secure the wellhead and hydraulic fracturing equipment, as well as any measures taken to ensure public safety.
5. A sampling plan that details future sampling locations and frequencies.
6. A detailed analysis/explanation of the root cause or causes of the failure of the flange.
7. An analysis of Carrizo's completion activity and well control procedures existing on March 13, 2013.
8. Corrective actions that Carrizo proposes to implement at all Marcellus Shale gas wells to prevent similar failures during hydraulic fracturing in the future, and a proposed implementation schedule.
9. Changes to Carrizo's completion and well control procedures that Carrizo proposes to implement at all Marcellus Shale gas wells, and a proposed implementation schedule.

Mr. Gary Byron

-4-

March 18, 2013

The Department strongly recommends that any hydraulic fracturing operations being conducted by your company within Pennsylvania be discontinued until the cause of this problem and a solution are identified.

This Notice of Violation is neither an order nor any other final action of the Department of Environmental Protection. It neither imposes nor waives any enforcement action available to the Department under any of its statutes. If the Department determines that additional enforcement action is appropriate, or that the circumstances relating to the incident constitute other violations of the statutes or regulations that the Department is responsible for enforcing, you will be notified of such determinations.

If you have any questions concerning the above, please contact me at 570.321.6557.

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer W. Means". The signature is fluid and cursive, with the first name being the most prominent.

Jennifer W. Means
Environmental Program Manager
Eastern Oil and Gas District

cc: Marc Cooley
Kevin Costello
Mike O'Donnell
Todd Miller
Andrea Schmid
Matt Shope
NCRO File No. 131-20191